DECpc AXP 150 and DEC 2000 Model 300 AXP

User Information

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This guide describes how to operate the DECpc AXP 150 and DEC 2000 Model 300 AXP systems.

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Preface

Purpose of This Manual

This manual describes how to operate the DECpc™ AXP™ 150 and the DEC™ 2000 Model 3000 AXP **systems**. It contains information on software storage devices, connecting the system to a **network**, and connecting hardware options to the system.

Audience

This manual is intended for anyone using the systems. It is written for both experienced and inexperienced users.

Structure of This Manual

This manual is divided into six chapters, an appendix, a glossary, and an index:

- Chapter 1 describes the system unit and its internal options.
- Chapter 2 describes how to turn the system on or off and how to boot the **operating system**.
- Chapter 3 describes how to use compact disc read-only memory (**CD-ROM**) and **diskette drive** software storage devices.
- Chapter 4 describes how to use **tape drive** software storage devices.
- Chapter 5 describes how to care for the media associated with the removable media devices.
- Chapter 6 describes how to connect external **peripherals** or **SCSI** devices to the system. It also describes how to connect the system to a network.
- Appendix A gives the list of associated and related documents.

- The glossary defines some of the technical terms used in this manual.

Additional Information

See Appendix A for the list of associated and related documents.

Conventions

The following conventions are used in this manual:

Convention	Description
monospace	Text displayed on the screen is shown in monospace type.
boldface type	Boldface type in examples indicates user input. Boldface type in text indicates the first instance of terms defined either in the text, in the glossary, or both.
italic type	Italic type emphasizes important information, indicates variables, and indicates complete titles of manuals.
nn nnn.nnn nn	A space character separates digits in numerals with 5 or more digits. For example, *10 000* equals *ten thousand*.
n.nn	A period in numerals signals the decimal point indicator. For example, *1.75* equals *one and three-fourths*.
UPPERCASE	Words in uppercase indicate a command.
n	A lowercase italic *n* indicates the generic use of a number. For example, 19*nn* indicates a 4-digit number in which the last 2 digits are unknown.
x	A lowercase italic *x* indicates the generic use of a letter. For example, *xxx* indicates any combination of three alphabetic characters.
Note	A note contains information of special importance to the reader.
Caution	A caution contains information to prevent damage to the equipment.

1

System Description

Introduction

The DECpc AXP 150 and DEC 2000 Model 300 AXP systems are high-performance systems with an architecture designed to run a variety of operating systems. This chapter describes these systems.

Note

The DECpc AXP 150 and DEC 2000 Model 300 AXP systems use the same enclosure and basic system components. They are differentiated by the operating system and additional hardware options that they support.

In This Chapter

This chapter contains the following sections:

- Operating System Support
- Client/Server Use
- System Features
- Front Panel Controls and Indicators
- Back Panel Ports and Connectors
- Back Panel Controls and Indicators
- Internal Options
- System Unit Key Information

Operating System Support

Summary

This section describes how the DECpc AXP 150 and DEC 2000 Model 300 AXP systems can support different operating systems.

System Architecture

The systems use the Digital Equipment Corporation **DECchip 21064**™ reduced instruction set computer (**RISC**) microprocessor. Based on the Digital™ Alpha AXP™ architecture, it provides all the power of a 64-**bit** computing environment. The Alpha AXP architecture privileged architecture library code (**PALcode**) provides the ability to use different operating systems, acting either as a client or a server.

Supported Operating Systems

Table 1–1 lists the operating systems supported by the systems. It also indicates whether you can operate the system as a client or a server with each operating system.

Table 1–1 Operating System Support

System Name	Operating System	Client Support	Server Support
DECpc AXP 150	Microsoft® Windows NT™ for AXP Systems (Windows NT)	Yes	Yes
DEC 2000 Model 300 AXP System	**OpenVMS™ AXP** Operating System (OpenVMS)	No	Yes
	DEC OSF/1® AXP Operating System (OSF/1)	No	Yes

Visual Display Unit

The DECpc AXP 150 and DEC 2000 Model 300 AXP systems use different visual display units, as follows:

- The DECpc AXP 150 uses a PC-standard monitor.
- The DEC 2000 Model 300 AXP system uses a VT-series **terminal** or equivalent. See Chapter 6 for information on connecting terminals to the system.

Client/Server Use

Summary

This section describes the different uses to which you can put these systems, depending on whether it is a client system or a server system.

Client Systems

Client systems use the Windows NT operating system. You can use a client system for the following tasks:

- To run PC applications locally, especially high-end applications
- To display the output of applications that you run remotely on a server, or to run the client portion of client/server applications

Server Systems

Server systems can use any of the supported operating systems. You can use a server system for the following tasks:

- As a file server, providing **disk** storage to PCs and other systems in a local area network (**LAN**)
- As a print server, providing common printing resources to PCs and other systems in a LAN
- As a compute server, providing processing power for client/server applications on one of the supported operating systems

System Features

Summary

This section describes the features provided by the system.

System Features

Table 1–2 lists the features of the system.

Table 1–2 System Features

Feature	Description
64-bit Alpha AXP RISC architecture	The 64-bit architecture provides significant performance advantages over 32-bit architectures, especially in the areas of **memory** and **cache bandwidth**.
Flexible memory architecture	You can upgrade the system memory from 16 megabytes (M **bytes**) to 128M bytes using memory options (see the section entitled Internal Options).
Six **EISA** expansion slots	The extended industry standard architecture (EISA) slots allow you to include up to six industry standard architecture (**ISA**) or EISA option boards. Standard option boards included with the system provide the following features: • Super video graphics array (SVGA) video adapter • **ThinWire**™ and **10BASE-T Ethernet** connection capabilities • Small computer system interface (SCSI) storage device connection capabilities Other option boards provide different capabilities (see the section entitled Internal Options).

(continued on next page)

Table 1–2 (Cont.) System Features

Feature	Description
Factory installed software (FIS)	The **system disk**, if installed, contains the operating system that you ordered. FIS software saves you time when installing the system, because you can **boot** the operating system directly from the system disk, without having to spend time installing it.
Space for five internal devices	The system supports up to four internal SCSI devices, including disk drives, compact disc read-only memory (CD-ROM) drives, and tape drives (see the section entitled Internal Options). A PC/AT-standard interface RX™26 diskette drive is a standard device shipped with all systems.
External **ports**	The standard system unit provides two **serial ports** and a **parallel port** to which you can connect peripherals, such as terminals or printers.

Front Panel Controls and Indicators

Summary

This section describes the controls and indicators located on the system unit front panel.

Controls and Indicators

Table 1–3 lists the controls and indicators on the front panel of the system unit and describes their function.

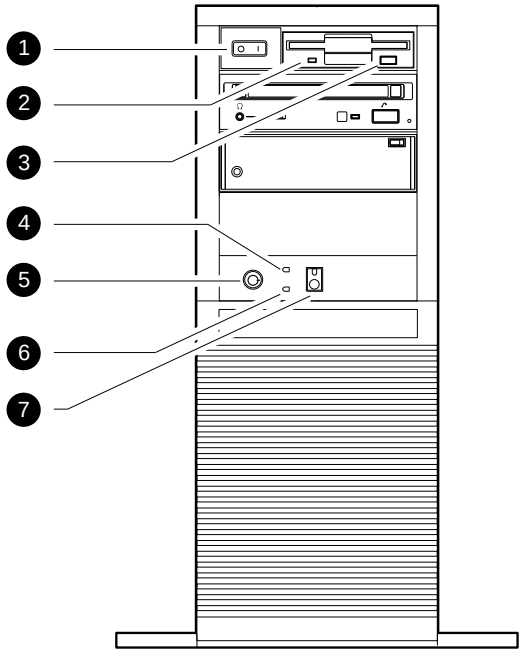
Table 1–3 Front Panel Controls and Indicators

Control or Indicator		Function
❶	On/Off switch	Switches the system unit on or off.
❷	Diskette drive activity LED (green)	Indicates when the system is accessing the diskette drive.
❸	Diskette drive eject button	Ejects a diskette from the diskette drive.
❹	Power indicator (green)	Indicates when the system unit is turned on.
❺	Keylock	This control is not used. Ignore its position.
❻	Keylock indicator (amber)	This indicator LED is not used. Ignore its indication.
❼	Halt button and indicator (green)	**Halts** an OpenVMS system or OSF/1 system, returning it to **console mode**. The indicator goes off when you hold in the halt button.

Front Panel Illustration

Figure 1–1 shows the location of the controls and indicators on the front panel of the system unit.

Figure 1–1 Front Panel Controls and Indicators



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Back Panel Ports and Connectors

Summary

This section describes the ports and connectors located on the system unit back panel.

Ports and Connectors

Table 1–4 lists the ports and connectors on the back panel of the system unit and describes their function.

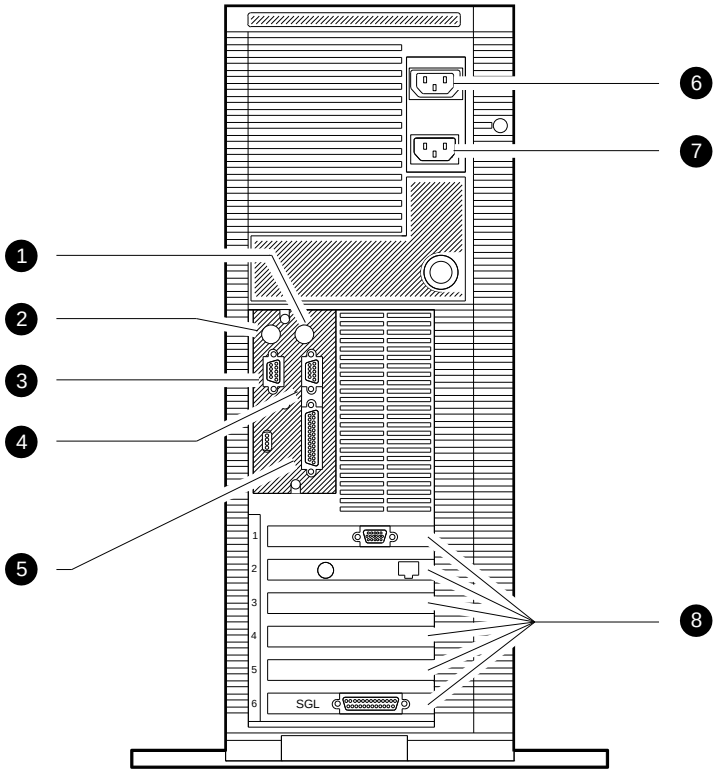
Table 1–4 Back Panel Ports and Connectors

Port or Connector		Function
❶	Mouse connector	Enables you to connect a PS/2® mouse to the system.
❷	Keyboard connector	Enables you to connect a PS/2 compatible keyboard to the system.
❸	Serial port/terminal port	Enables you to connect a console terminal or serial-line peripheral to the system.
❹	Serial port	Enables you to connect a serial-line peripheral to the system.
❺	Parallel port	Enables you to connect a Centronics™-compatible parallel printer or other peripheral to the system.
❻	Power output connector	Enables you to supply power to a peripheral device, for example, a terminal or monitor.
❼	Power input connector	Enables you to connect the system unit to a power socket.
❽	Six EISA or ISA slots	Depending on the option installed, these slots may contain various ports, connectors, controls, or indicators. See your option documentation for more information.

Ports and Connectors Illustration

Figure 1–2 shows the location of the ports and connectors on the back panel of the system unit.

Figure 1–2 Back Panel Ports and Connectors



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Back Panel Controls and Indicators

Summary

This section describes the controls and indicators located on the system unit back panel.

Controls and Indicators

Table 1–5 lists the controls and indicators on the back panel of the system unit and describes their function.

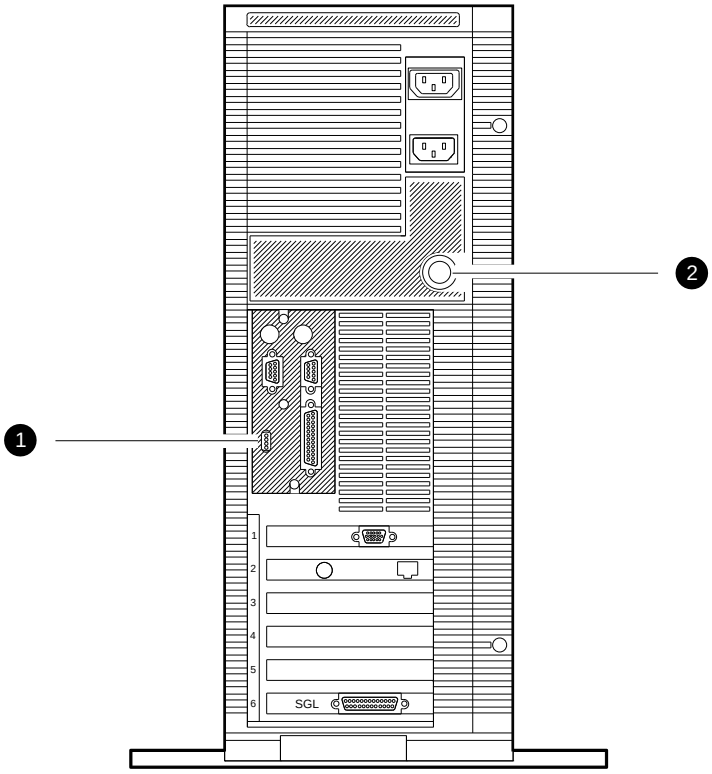
Table 1–5 Back Panel Controls and Indicators

Control or Indicator		Function
❶	**Diagnostic LED** display	Four LEDs display the status of the system and facilitate troubleshooting
❷	Chassis keylock	Mechanically locks the outside cover to prevent unauthorized access to the system unit internal components

Controls and Indicators Illustration

Figure 1–3 shows the location of the controls and indicators on the back panel of the system unit.

Figure 1–3 Back Panel Controls and Indicators



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Internal Options

Summary

This section lists and describes the supported internal options. It describes the following types of options:

- Storage options
- EISA options
- Memory options

Storage Options

Table 1–6 lists the supported internal storage options.

Table 1–6 Supported Internal Storage Options

Item	Description	Capacity
❶	RRD42™ 5.25-inch CD-ROM drive	600M-byte CD-ROM
❷	RX26 3.5-inch diskette drive†	Range of diskettes
❸	RZ™24L 3.5-inch disk drive	245M bytes
❹	RZ25 3.5-inch disk drive	426M bytes
❺	RZ26 3.5-inch disk drive	1.05 Gigabytes (G bytes)
❻	TLZ06 5.25-inch tape drive	Range of cassettes
❼	TZK10 5.25-inch tape drive	Range of cartridges

†Uses the PC/AT-standard diskette drive interface

Ordering Information

Digital reserves the right to add or remove options from the list of supported options. Contact your Digital sales representative for information on the current list of supported options and for information on ordering these options.

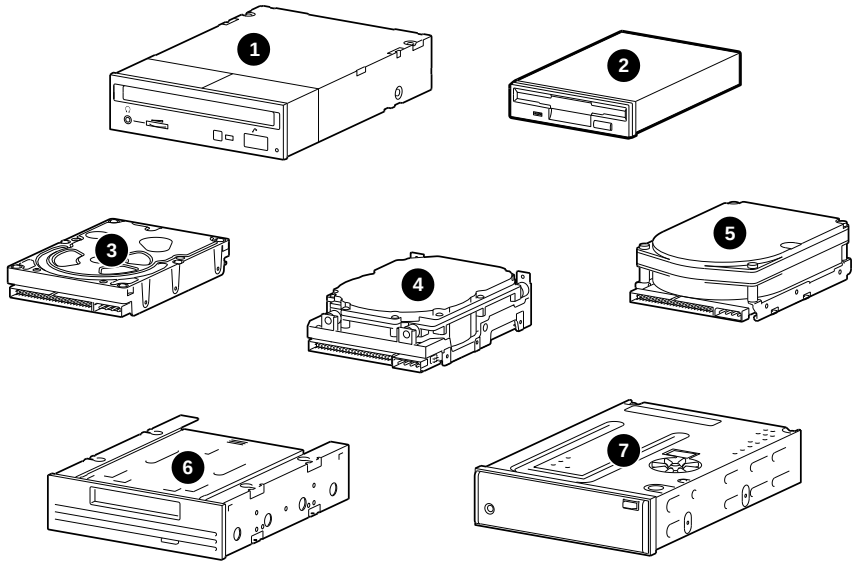
Note

When ordering internal options, it is important that you specify the system type and operating system. Not all of the options are supported by both the DECpc AXP 150 and the DEC 2000 Model 3000 systems.

Storage Options Illustration

Figure 1–4 shows the supported internal storage options.

Figure 1–4 Supported Internal Storage Options



Internal Options, *continued*

EISA and ISA Options

Digital supports a variety of EISA and ISA option boards, including the following types of options:

- SCSI options
- Video options
- Networking options
- Communications options
- Other options

Ordering Information

Digital reserves the right to add or remove options from the list of supported options. Contact your Digital sales representative for information on the current list of supported options and for information on ordering these options.

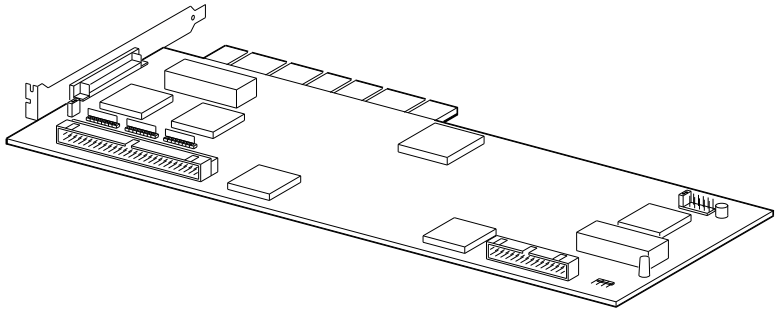
Note

When ordering internal options, it is important that you specify the system type and operating system. Not all of the options are supported by both the DECpc AXP 150 and the DEC 2000 Model 3000 systems.

EISA Option Illustration

Figure 1–5 shows a sample EISA option.

Figure 1–5 Sample EISA Option



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Internal Options, *continued*

Memory Options

The system currently supports two memory option sizes:

- 16M-byte memory option
- 64M-byte memory option

Using these memory options, you can configure the system memory from 16M-bytes to 128M-bytes.

Note

DEC 2000 Model 300 AXP systems require a minimum memory configuration of 32M-bytes to run the OpenVMS or OSF/1 operating systems.

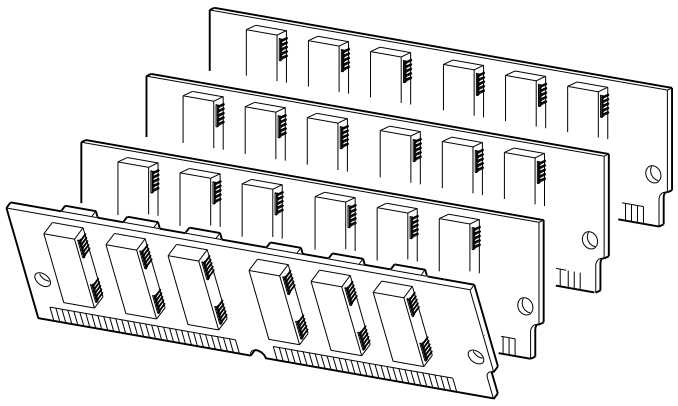
Ordering Information

Digital reserves the right to add or remove memory options from the list of supported memory options. Contact your Digital sales representative for information on the current list of supported memory options and for information on ordering these options.

Memory Option Illustration

Figure 1–6 shows a sample memory option.

Figure 1–6 Sample Memory Option



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System Unit Key Information

Summary

This section shows the location of the key number on the system unit key. You must record this number in case you need to order a replacement key.

Important Information

Caution

Digital does not have a master key that opens all systems. You must keep the system unit key in a safe place so that you do not lose it. Write the key number and letter in the space provided in this section so that you can order a replacement key if necessary.

Recording the Key Number and Letter

Figure 1–7 shows the location of the system unit key number and letter. Write the key number and letter in the following spaces:

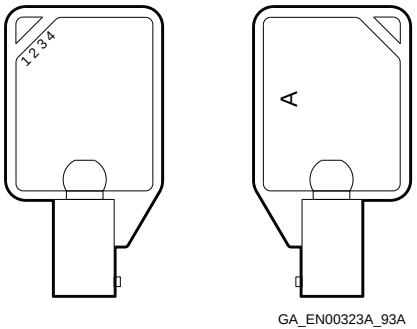
System Unit Key Number:

System Unit Key Letter:

Key Number and Letter Location

Figure 1–7 shows the location of the key number and letter on the system unit key.

Figure 1–7 Key Number and Letter Location



2

Using the System

Introduction

This chapter describes how to position the system unit, turn it on or off, examine the results of the **power-up** tests, and boot the operating system.

In This Chapter

This chapter contains the following sections:

- Choosing a Location for the System Unit
- Ergonomic Considerations
- Turning the System On or Off
- OpenVMS and OSF/1 Console Power-Up Test Displays
- Windows NT Firmware Power-Up Test Displays
- Booting Windows NT
- Booting OpenVMS
- Booting OSF/1

Choosing a Location for the System Unit

Summary

This section describes the locations and conditions that best suit the system unit.

Physical Orientation

You must keep the system unit in a vertical position. Install the system unit feet to make it more stable and to prevent it from toppling. See the *Customer Technical Information* manual for information on installing and removing the system unit feet.

Environmental Conditions

Table 2–1 lists the environmental conditions in which the system unit best operates.

Table 2–1 Environmental Conditions

Condition	Explanation
Temperature range	The room temperature must be between 10°C and 35°C (50°F and 95°F.)
Relative humidity	The relative humidity must be between 10 percent and 90 percent.
Air circulation	You must leave a minimum clearance of 3 inches on all sides of the system unit to allow the air to circulate. Fans inside the system unit circulate the air to prevent excessive heat, which can damage the system components.

Unsuitable Locations

Table 2–2 lists the various locations where you must not operate the system unit.

Table 2–2 Unsuitable Locations

Location	Explanation
Dirty or dusty locations	Dirt and dust can damage the system components and clog the system unit air vents.
Locations exposed to direct heat or sunlight	Direct heat and sunlight can cause the system unit to overheat and fail.
Unstable locations	The system unit weighs approximately 18.2 kg (40 lb) depending on the configuration. If you are not placing the system unit on the floor, make sure that the location is steady and stable and can support the weight.

Cable Considerations

You must use a mouse, keyboard, and monitor with DECpc AXP 150 systems. These devices are supplied with standard-length cables. However, these cables may be too short for your requirements. If the cables are too short, Digital can supply you with cable extensions for these devices. Contact your Digital sales representative for information on ordering these cable extensions.

Ergonomic Considerations

Summary

This section describes how to adjust your posture and position the components of the system for optimum comfort when you are using it.

Positioning System Components

Figure 2–1 shows the optimal positioning for the system components, desk, and chair relative to your posture. Table 2–3 explains the figure.

Table 2–3 Positioning the System Components

Item	Explanation
Adjust the chair so that	
❶	Your feet are flat on the floor—use a foot rest if necessary.
❷	Your legs form a right angle at the knee.
❸	The backs of your knees are free from the seat pan.
❹	You are sitting upright, with support for your lower back.
Adjust the screen and keyboard so that	
❺	Your wrists are straight and supported. The keyboard, and mouse (if installed) should be at elbow height.
❻	Your elbows are close to your sides, with your upper arms perpendicular to the floor.
❼	Your neck is in a neutral posture, with the top of the screen no higher than eye level.
Adjust the lighting and screen so that	
❽	The light is directed away from the screen to reduce glare. Use the tilt and swivel capabilities of the monitor or terminal to adjust it for your comfort.
❾	The screen is at the correct distance for your eyesight.

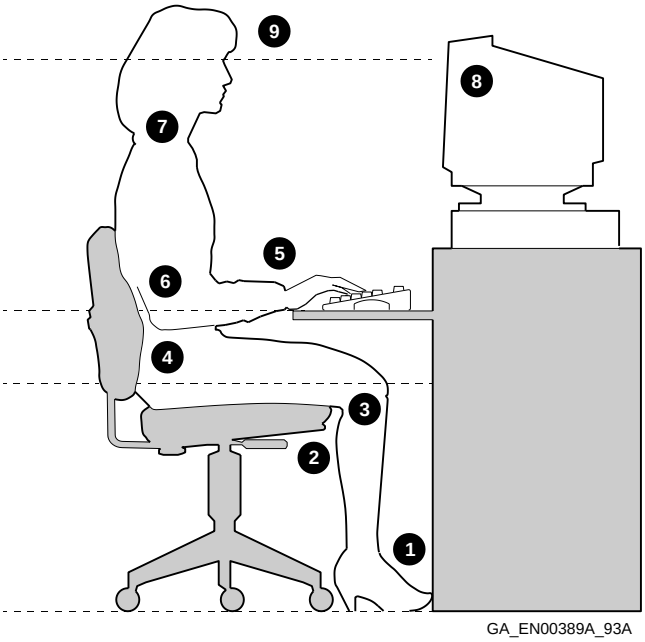
Moving the System Unit

The system unit is heavy. To avoid injury, get assistance from another person before trying to lift, move, or carry it.

Positioning Illustration

Figure 2–1 shows the optimal positioning for the system components, desk, and chair relative to your posture.

Figure 2–1 Positioning the System Components



Turning the System On or Off

Summary

This section describes how to turn the system on or off without damaging any of the system components.

Turning On the System

Table 2–4 lists the steps that you must follow to turn the system on.

Table 2–4 Turning On the System

Step	Action
1	Set the on/off switch on all peripherals that are connected to the system unit to the on position.
2	Set the on/off switch on the system unit to the on position (❶).
3	Check the results of the power-up tests, if displayed (see the section entitled OpenVMS and OSF/1 Console Power-Up Test Displays or Windows NT Firmware Power-Up Test Displays).
4	Boot the operating system (see the sections entitled Booting Windows NT , Booting OpenVMS , or Booting OSF/1).

Turning Off the System

Table 2–5 lists the steps that you must follow to turn the system off.

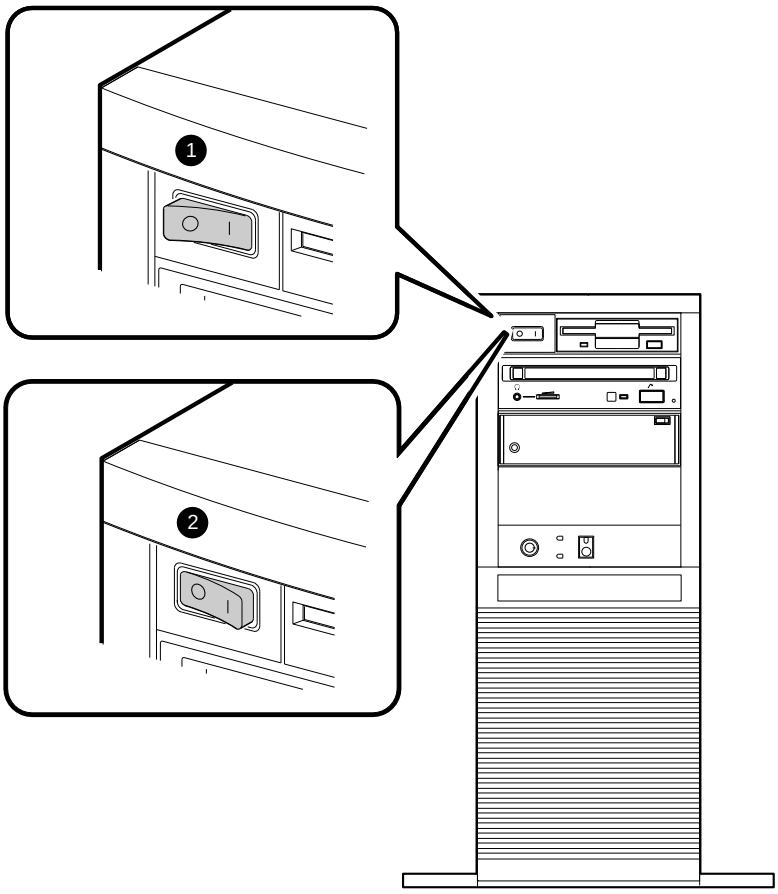
Table 2–5 Turning Off the System

Step	Action
1	Shut down the operating system, following the instructions in the operating system documentation.
2	Set the on/off switch on all peripherals that are connected to the system unit to the off position.
3	Set the on/off switch on the system unit to the off position (❷).

On/Off Switch Positions Illustration

Figure 2–2 shows the system unit on/off switch in both the on position and the off position.

Figure 2–2 On/Off Switch Positions



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OpenVMS and OSF/1 Console Power-Up Test Displays

Summary

This section describes how to recognize when power-up tests pass or fail in the OpenVMS and OSF/1 console. It also describes what to do if the system fails the power-up tests.

Power-Up Test Display Differences

The power-up test display indicates tests that pass with the word *OK* ❶. It indicates tests that fail with double question marks and an error code ❷.

After the system passes the power-up tests, it displays the following message:

```
System power up OK.
```

After the system fails the power-up tests, it displays the following message:

```
System power up tests detected error(s).
See your system documentation for more information.
```

If the System Passes

If the system passes the power-up tests, it either boots the selected operating system or halts in console mode, depending on the system default settings.

If the System Fails

Table 2–6 describes the steps that you must follow after the system fails the power-up tests.

Table 2–6 Power-Up Test Failure Procedure

Step	Action
1	If the system fails the power-up tests, turn the system unit off, wait approximately 15 seconds, then turn it back on again.
2	If the system continues to fail the power-up tests, see the *Customer Technical Information* manual for information on troubleshooting the system, running diagnostics, and contacting your Digital service representative.

Power-Up Test That Passes

Example 2–1 shows a power-up test that passes.

Example 2–1 OpenVMS and OSF/1 Console Power-Up Test That Passes

```
This 1MB Flash contains BASE LEVEL n.n Jensen Console Code

Jensen Alpha PC - Rom Version nn
Digital Equipment Corporation
System conducting power up tests
------------------------------------------------------------
Devnam            Devstat
--------          -------
     CPU          OK EV4 P2 6.6ns
     MEM          OK 32MB
     NVR          OK
     SCC          OK ❶
      IT          OK
     KBD          OK
     LPT          OK
      NI          OK  09-2B-36-0A-12-FF
    SCSI          OK
------------------------------------------------------------
System power up OK.
```

Power-Up Test That Fails

Example 2–2 shows a power-up test that fails.

Example 2–2 OpenVMS and OSF/1 Console Power-Up Test That Fails

```
         .
         .
         .
     SCC     ?? 00 0030 ❷
      IT            OK
     KBD            OK
     LPT            OK
      NI            OK 08-00-2B-2E-31-81
    SCSI            OK
------------------------------------------------------------------
System power up tests detected error(s).
See your system documentation for more information.

>>>
```

Windows NT Firmware Power-Up Test Displays

Summary

This section describes how to recognize when power-up tests pass or fail in the Windows NT **firmware**. It also describes what to do if the system fails the power-up tests.

Power-Up Test Display Differences

The power-up test display indicates tests that pass with the word *passed*❶. It indicates tests that fail with the word *failed* and an error code ❷.

After the system passes the power-up tests, it displays the following message:

```
System power up OK.
```

After the system fails the power-up tests, it displays the following message, then halts in the OpenVMS and OSF/1 console:

```
System power up tests detected error(s).
See your system documentation for more information.
```

If the System Passes

If the system passes the power-up tests, it either boots Windows NT or halts in the Windows NT firmware Boot menu, depending on the system default settings.

If the System Fails

Table 2–7 describes the steps that you must follow after the system fails the power-up tests.

Table 2–7 Power-Up Test Failure Procedure

Step	Action
1	If the system fails the power-up tests, turn the system unit off, wait approximately 15 seconds, then turn it back on again.
2	If the system continues to fail the power-up tests, see the *Customer Technical Information* manual for information on troubleshooting the system, running diagnostics, and contacting your Digital service representative.

Power-Up Test That Passes

Example 2–3 shows a power-up test that passes.

Example 2–3 Windows NT Firmware Power-Up Test That Passes

```
This 1MB Flash contains BASE LEVEL n.n Jensen Console Code

Jensen Alpha PC - Rom Version nn
Digital Equipment Corporation
System conducting power up tests
Press SPACEBAR to abort Memory Test
------------------------------------------------------------
Testing MEM .... passed 32MB
Testing NVR .... passed
Testing SCC .... passed
Testing IT .... passed  ❶
Testing KBD .... passed
Testing LPT .... passed
Testing VGA .... passed
Testing NI .... passed 09-2B-36-0A-12-FF
Testing SCSI .... passed
------------------------------------------------------------
System power up OK.
```

Power-Up Test That Fails

Example 2–4 shows a power-up test that fails.

Example 2–4 Windows NT Firmware Power-Up Test That Fails

```
         .
         .
         .
Testing IT .... failed 00 0400 ❷
Testing KBD .... passed
Testing LPT .... passed
Testing VGA .... passed
Testing NI .... passed 08-00-2B-2E-31-81
Testing SCSI .... passed
------------------------------------------------------------------
System power up tests detected error(s).
See your system documentation for more information.

>>>
```

Booting Windows NT

Summary

This section describes how to boot the Windows NT operating system from the system disk.

Windows NT Factory Installed Software

The Windows NT operating system, if supplied, is factory-installed on the system disk. Windows NT factory installed software (FIS) saves you time when installing the system, because you do not need to install the operating system.

Booting Windows NT Automatically

When the system is shipped with Windows NT FIS, the system **default** settings cause the system to boot from the system disk automatically after it successfully completes its power-up tests. However, the system counts down for 10 seconds after it displays the Boot menu before booting. You can stop the system from booting before this time-limit expires by choosing another menu item by pressing the up arrow key or down arrow key.

You can change these system default settings if you want. For example, you can cause the system to halt at the Windows NT firmware Boot menu after it completes its power-up tests, or you can increase the count down time-limit.

Boot Selections

The Windows NT firmware uses boot selections to identify the location of the operating system files. When the system is shipped, the default boot selection identifies the system disk as the location of the operating system files. This boot selection causes the system to boot from the system disk. You can set alternative boot selections if, for example, you want to boot the operating system from a different device. See the *Customer Technical Information* manual for information on setting alternative boot selections.

Using the Boot Menu

Table 2–8 lists the steps that you must follow to boot Windows NT from the Boot menu.

Table 2–8 Booting the Windows NT Operating System

Step	Action	Result
1	To boot the system using the default boot selection, choose the Boot Windows NT item on the Boot menu and press Return.	The system boots from the system disk, using the default boot selection **environment variables**.
2	To boot the system using an alternative boot selection, choose the Boot an alternate operating system item on the Boot menu and press Return.	The system displays a list of the alternative boot selection names.
3	Choose the alternative boot selection name that you want to boot and press Return.	The system boots from the boot selection that you choose.

Windows NT Boot Menu

Example 2–5 shows the Windows NT Boot menu.

Example 2–5 Windows NT Boot Menu

```
Boot menu:

    Boot Windows NT
    Boot an alternate operating system
    Run a program
    Supplementary menu...

Use the arrow keys to select, then press Enter.
```

Windows NT Boot Selection Menu

Example 2–6 shows the Windows NT Boot selection menu.

Example 2–6 Windows NT Boot Selection Menu

```
 Boot menu:

    Boot Windows NT  (Default)
    Boot Windows NT 2


 Use the arrow keys to select, then press Enter.
```

Booting OpenVMS

Summary

This section describes how to boot the OpenVMS operating system from the system disk.

OpenVMS Factory Installed Software

The OpenVMS operating system, if supplied, is factory-installed on the system disk. OpenVMS factory installed software (FIS) saves you time when installing the system, because you do not need to install the operating system. For more information on OpenVMS Factory Installed Software, see the *OpenVMS Factory Installed Software User Information* card.

Booting OpenVMS Automatically

When the system is shipped, the system default settings cause the system to boot from the system disk automatically after it successfully completes its power-up tests. You can change these system default settings if you want. For example, you can cause the system to halt at the console **prompt** after it completes its power-up tests.

System Defaults

The OpenVMS operating system uses default settings to tell the system where the operating system is located and how to boot the system. When the system is shipped, these default settings cause the system to boot from the system disk. You can set different default settings if, for example, you want to boot the operating system from a different device. See the *Customer Technical Information* manual for information on setting different default settings.

Booting OpenVMS

Enter the following command to boot the OpenVMS operating system using the system default settings:

```
>>>
>>> BOOT
```

Booting OSF/1

Summary

This section describes how to boot the OSF/1 operating system from the system disk.

OSF/1 Factory Installed Software

The OSF/1 operating system, if supplied, is factory-installed on the system disk. OSF/1 factory installed software (FIS) saves you time when installing the system, because you do not need to install the operating system. For more information on OSF/1 Factory Installed Software, see the *DEC OSF/1 AXP Factory Installed Software User Information* card.

Booting OSF/1 Automatically

When the system is shipped, the system default settings cause the system to boot from the system disk automatically after it successfully completes its power-up tests. You can change these system default settings if you want. For example, you can cause the system to halt at the console prompt after it completes its power-up tests.

System Defaults

The OSF/1 operating system uses default settings to tell the system where the operating system is located and how to boot the system. When the system is shipped, these default settings cause the system to boot from the system disk. You can set different default settings if, for example, you want to boot the operating system from a different device. See the *Customer Technical Information* manual for information on setting different default settings.

Booting OSF/1

Enter the following command to boot the OSF/1 operating system using the system default settings:

```
>>>
>>> boot
```

3

Using CD-ROM and Diskette Drives

Introduction

This chapter describes the following CD-ROM and diskette drives:

- RRD42 CD-ROM drive
- RX26 diskette drive

In This Chapter

This chapter contains the following sections:

- RRD42 CD-ROM Drive Description
- Inserting a Compact Disc into a Caddy
- Inserting a Caddy into the RRD42 CD-ROM Drive
- Removing a Caddy from the RRD42 CD-ROM Drive
- RX26 Diskette Drive Description
- Using the RX26 Diskette Drive
- Cleaning the RX26 Diskette Drive Heads

RRD42 CD-ROM Drive Description

Summary

This section contains general information on the RRD42 CD-ROM drive. It also identifies the controls and indicators on the drive.

Description

The RRD42 CD-ROM drive is a read-only device that can read information from 600M-byte compact discs. The compact disc fits into a supplied **caddy**, which you insert into the drive. Compact discs are commonly used to distribute software and online information such as documentation.

Controls and LEDs

Table 3–1 lists the controls and LEDs on the RRD42 CD-ROM drive.

Table 3–1 RRD42 CD-ROM Drive Controls and LEDs

Item	Description
❶	Headphone socket
❷	Volume control
❸	Busy LED (green)
❹	Eject button
❺	Emergency eject hole

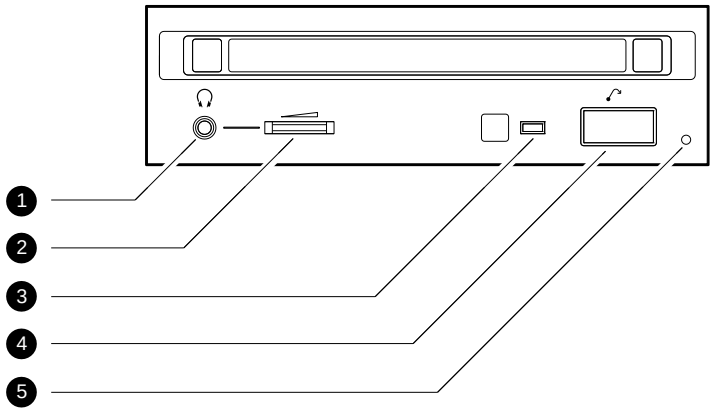
If Errors Occur

If errors occur while you are using the RRD42 CD-ROM drive, see the *Customer Technical Information* manual for information on troubleshooting.

Controls and LEDs Illustration

Figure 3–1 shows the location of the controls and LEDs on the RRD42 CD-ROM drive.

Figure 3–1 RRD42 Controls and LEDs



Inserting a Compact Disc into a Caddy

Summary

This section describes how to insert a compact disc into a caddy.

Insertion Procedure

Table 3–2 lists the steps that you must follow to insert a compact disc into a caddy.

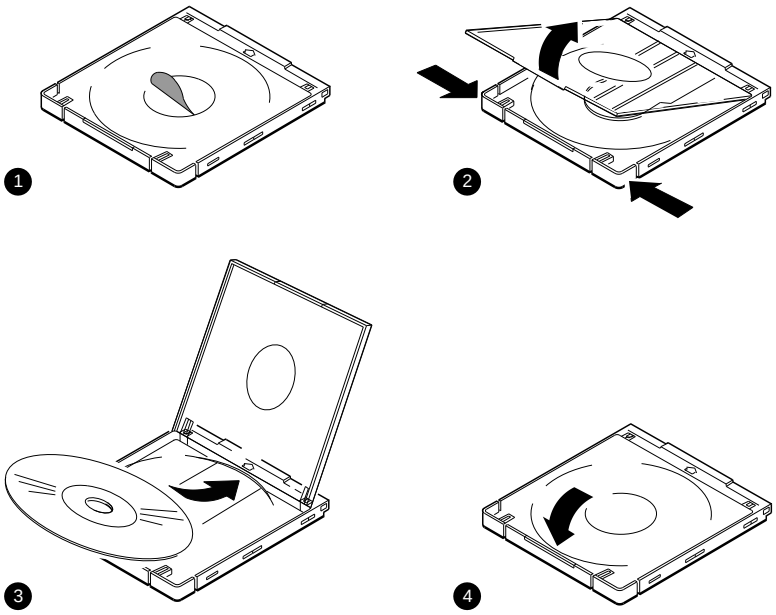
Table 3–2 Inserting a Compact Disc into a Caddy

Step	Action
1	If necessary, remove the protective film from the center of the caddy lid (❶).
2	Press the tabs on both sides of the caddy and open the lid (❷).
3	Place the compact disc in the caddy with the label facing upwards (❸). Make sure that the compact disc lies flat in the caddy.
4	Close the caddy lid firmly (❹).

Compact Disc and Caddy Illustration

Figure 3–2 shows how to insert a compact disc into a caddy.

Figure 3–2 Inserting a Compact Disc into a Caddy



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Inserting a Caddy into the RRD42 CD-ROM Drive

Summary

This section describes how to insert a caddy containing a compact disc into the RRD42 CD-ROM drive.

Caddy Insertion Procedure

Table 3–3 lists the steps that you must follow to insert a caddy containing a compact disc into an RRD42 CD-ROM drive.

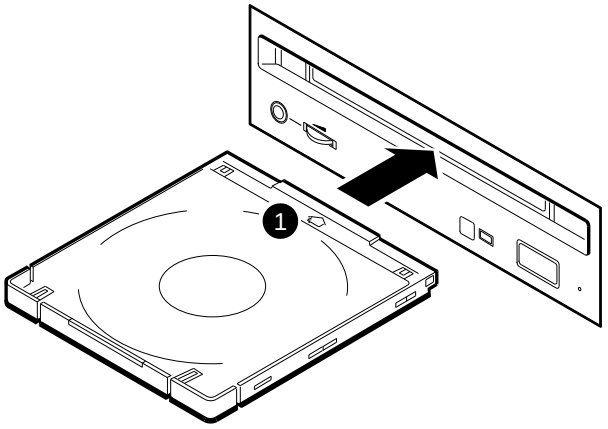
Table 3–3 Inserting a Caddy into the RRD42 CD-ROM Drive

Step	Action	Result
1	Insert the caddy fully into the drive slot with the compact disc label facing upwards and with the arrow on the caddy in the correct position (❶).	The busy LED lights, stays on for a few seconds, and then goes off.
2	When the busy LED goes off, you can send software commands to the RRD42 CD-ROM drive.	

Caddy Insertion Illustration

Figure 3–3 shows how to insert a caddy containing a compact disc into the RRD42 CD-ROM drive.

Figure 3–3 Inserting a Caddy into the RRD42 CD-ROM Drive



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Removing a Caddy from the RRD42 CD-ROM Drive

Summary

This section describes how to remove a caddy containing a compact disc from the RRD42 CD-ROM drive.

Caddy Removal Procedure

Table 3–4 lists the steps that you must follow to remove a caddy containing a compact disc from an RRD42 CD-ROM drive.

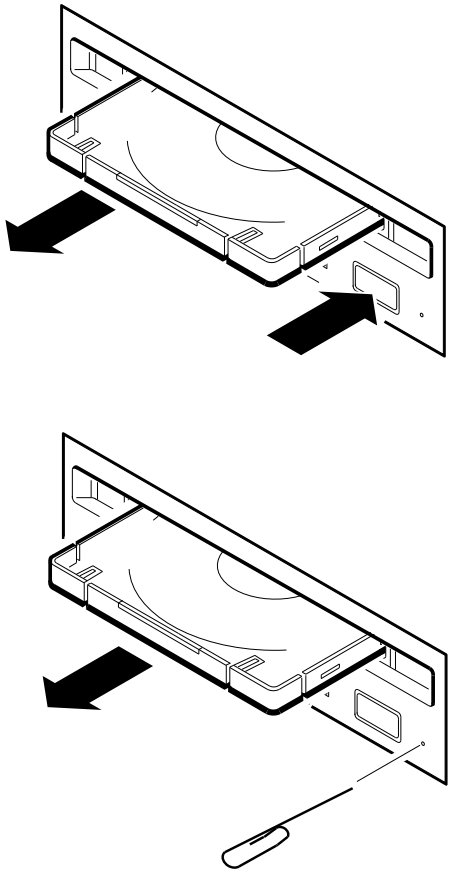
Table 3–4 Removing a Caddy from the RRD42 CD-ROM Drive

Step	Action	Result
1	Press the eject button on the front of the RRD42 CD-ROM drive.	The caddy emerges from the drive slot.
2	When the caddy emerges, remove it from the drive slot.	If the caddy does not emerge, go to step 3 for further instructions.
3	Shut down the operating system following the instructions listed in the operating system documentation.	
4	Set the on/off switches on all peripherals and on the system unit to the off position.	
5	Insert a straightened large paper clip or metal rod, 1.2 millimeters (mm) in diameter and not less than 35 mm long, into the emergency eject hole and push it in using some force.	The caddy rises in the hole, then emerges from the drive slot.
6	Remove the caddy from the drive slot.	

Caddy Removal Illustration

Figure 3–4 shows how to remove a caddy containing a compact disc from the RRD42 CD-ROM drive.

Figure 3–4 Removing a Caddy from the RRD42 CD-ROM Drive



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RX26 Diskette Drive Description

Summary

This section contains general information on the RX26 diskette drive. It also identifies the controls and indicators on the drive.

Description

The RX26 diskette drive is a 3.5-inch device that can read information from, and write information to, 3.5-inch 1.44M-byte high-density (HD) or 2.88M-byte extra-density (ED) diskettes. The RX26 diskette drive can also read information from, but not write to, standard 720-kilobyte diskettes. Diskettes are commonly used to **back up**, exchange, or distribute software or data.

Controls and LEDs

Table 3–5 lists the controls and LEDs on the RX26 diskette drive.

Table 3–5 RX26 Diskette Drive Controls and LEDs

Item	Description
❶	Activity LED (green)
❷	Eject button

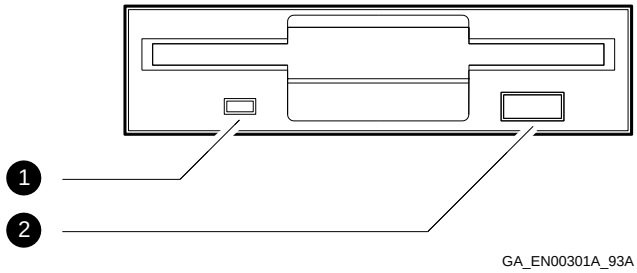
If Errors Occur

If errors occur while you are using the RX26 diskette drive, see the *Customer Technical Information* manual for information on troubleshooting.

Controls and LEDs Illustration

Figure 3–5 shows the location of the controls and LEDs on the RX26 diskette drive.

Figure 3–5 RX26 Controls and LEDs



Using the RX26 Diskette Drive

Summary

This section describes how to insert diskettes into and remove them from the RX26 diskette drive.

Important Information

Note

Never remove a diskette while the diskette is performing a function. While the diskette is performing a function, the activity LED either stays on or flashes, depending on the function.

Insertion Procedure

To insert a diskette into the RX26 diskette drive, slide the diskette into the drive. The diskette slides in and drops to its load position.

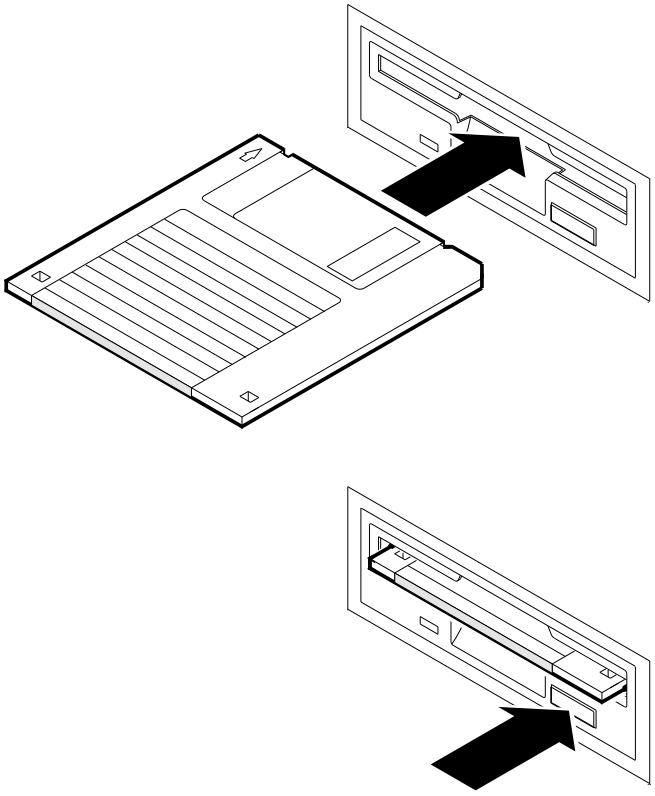
Removal Procedure

To remove a diskette from the RX26 diskette drive, press the eject button on the front of the diskette drive. Remove the diskette when it extends from the diskette slot.

Insertion and Removal Illustration

Figure 3–6 shows how to insert a diskette into and remove it from an RX26 diskette drive.

Figure 3–6 Inserting and Removing a Diskette



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Cleaning the RX26 Diskette Drive Heads

Summary

This section describes how to clean the RX26 diskette drive **heads**. The heads are the components of the RX26 diskette drive that read **data** from and write data to the diskettes.

Cleaning Procedure

Digital recommends that, when cleaning the heads, you use the RXA3K-HC head cleaning kit and follow the instructions supplied with the kit. You can order the RXA3K-HC head cleaning kit from your Digital sales representative.

When to Clean the Heads

Digital recommends that you clean the heads of the RX26 diskette drive after approximately 8 hours of *use*. Also clean the drive heads if you encounter problems reading or writing data. The following factors affect the cleaning interval:

- Frequency of use
- Quality of the diskette
- Quality of the environment

4
Using Tape Drives

Introduction

This chapter describes the following tape drives:

- TLZ06 cassette tape drive
- TZK10 QIC tape drive

In This Chapter

This chapter contains the following sections:

- TLZ06 Tape Drive Description
- Using the TLZ06 Tape Drive
- TZK10 Tape Drive Description
- Inserting a QIC Tape into a TZK10 Tape Drive
- Removing a QIC Tape from a TZK10 Tape Drive
- Cleaning the Tape Drive Heads

TLZ06 Tape Drive Description

Summary

This section contains general information on the TLZ06 cassette tape drive. It also identifies the controls and indicators on the drive.

Description

The TLZ06 is a tape drive that uses cassette tapes. The cassette tapes are industry-standard digital data storage (DDS) digital audio tapes (DATs). It is a helical scan tape drive that uses 4 millimetre (mm) tape. It is commonly used for archival, data storage and retrieval, and data collection purposes.

Controls and LEDs

Table 4–1 lists the controls and LEDs on the TLZ06 tape drive.

Table 4–1 TLZ06 Tape Drive Controls and LEDs

Item	Description
❶	Tape/activity LED (green)
❷	Write-protect LED (orange)
❸	Unload button

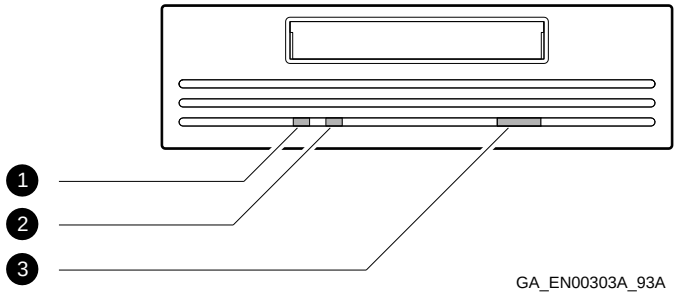
If Errors Occur

If errors occur while you are using the TLZ06 tape drive, see the *Customer Technical Information* manual for information on troubleshooting.

Controls and LEDs Illustration

Figure 4–1 shows the location of the controls and LEDs on the TLZ06 tape drive.

Figure 4–1 TLZ06 Tape Drive Controls and LEDs



Using the TLZ06 Tape Drive

Summary

This section describes how to insert a cassette tape into and remove it from the TLZ06 tape drive.

Insertion Procedure

Insert the cassette tape until the TLZ06 draws it in. When you insert the tape correctly, the tape/activity LED flashes dimly and then stays on. If both LEDs flash, see the *Customer Technical Information* manual for information on troubleshooting.

Removal Procedure

Table 4–2 lists the steps that you must follow to manually remove a cassette tape from the TLZ06 tape drive.

Note

Some operating system applications allow you to eject the cassette tape using software commands or menu items. See your operating system or application documentation for more information.

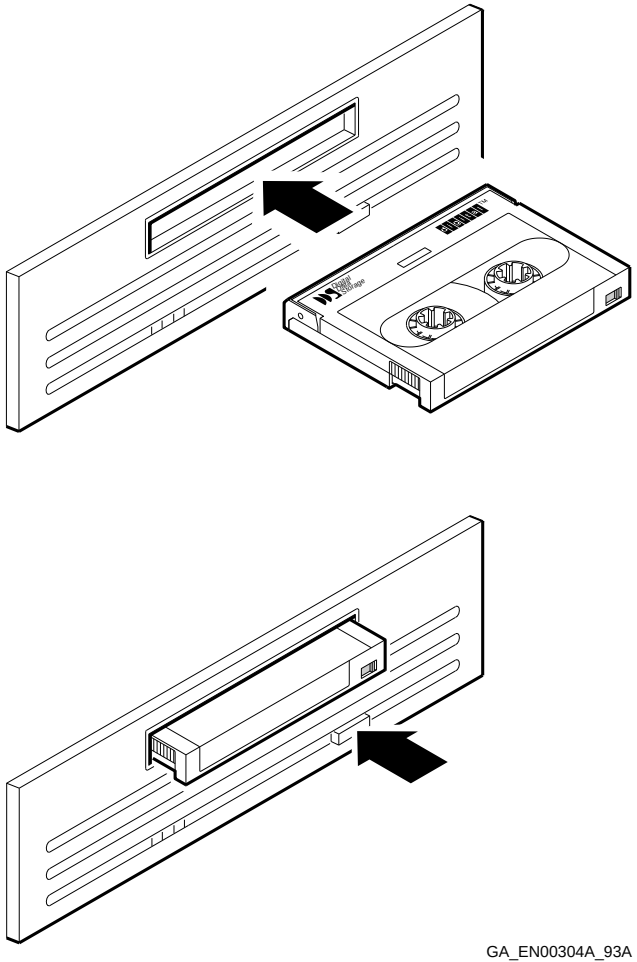
Table 4–2 Removing a Cassette Tape from the TLZ06 Tape Drive

Step	Action	Result
1	Enter the operating system commands to dismount the cassette tape.	The tape/activity LED flashes and then stays on.
2	When the tape/activity LED stays on, press the unload button.	
3	Remove the cassette tape.	

Installation and Removal Illustration

Figure 4–2 shows how to insert a cassette tape into and remove it from a TLZ06 tape drive.

Figure 4–2 Inserting and Removing a Cassette Tape



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TZK10 Tape Drive Description

Summary

This section contains general information on the TZK10 tape drive. It also identifies the controls and indicators on the drive.

Description

The TZK10 QIC tape drive is a quarter-inch cartridge, streaming tape drive. It is commonly used for archival, data storage and retrieval, and data collection purposes.

Controls and LEDs

Table 4–3 lists the controls and LEDs on the TZK10 tape drive.

Table 4–3 TZK10 Tape Drive Controls and LEDs

Item	Description
❶	Dual-color LED (amber or green)
❷	Eject button

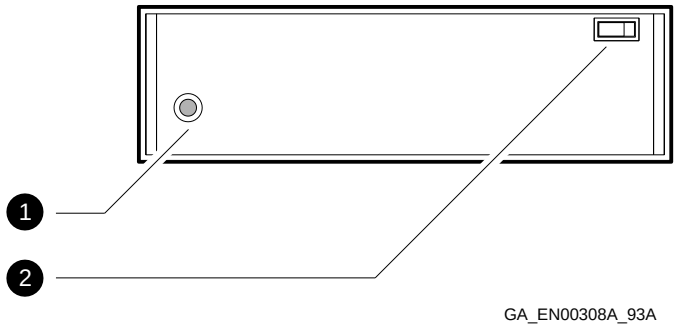
If Errors Occur

If the dual-color LED turns amber or if errors occur while you are using the TZK10 tape drive, see the *Customer Technical Information* manual for information on troubleshooting.

Controls and LEDs Illustration

Figure 4–3 shows the location of the controls and LEDs on the TZK10 tape drive.

Figure 4–3 TZK10 Eject Button and LED



Inserting a QIC Tape into a TZK10 Tape Drive

Summary

This section describes how to insert a QIC tape into the TZK10 tape drive.

Insertion Procedure

Table 4–4 lists the steps that you must follow to insert a QIC tape into a TZK10 tape drive.

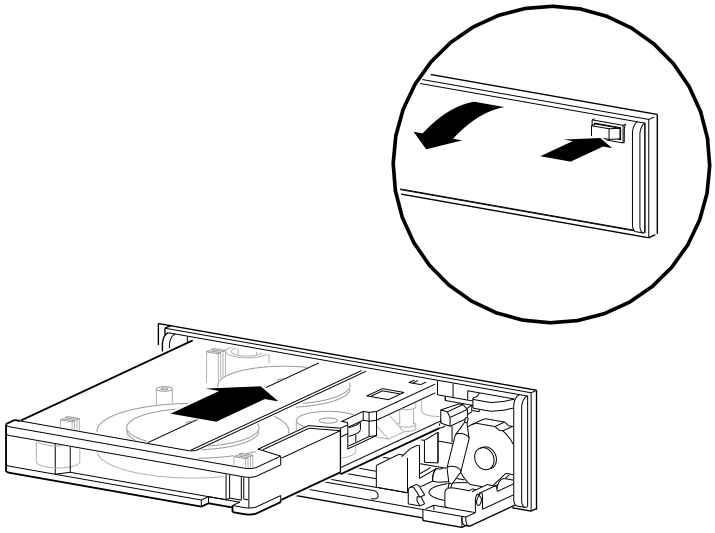
Table 4–4 Inserting a QIC Tape into a TZK10 Tape Drive

Step	Action	Result
1	Press the eject button.	The drive door partially opens.
2	Open the drive door fully.	
3	Insert the QIC tape into the TZK10 until it slides no further.	
4	Close the drive door fully.	The dual-color LED turns green, then flashes green. The TZK10 makes several whirring sounds, then the sounds stop. The dual-color led stays green. You can now send operating system commands to the TZK10 tape drive.

Insertion Illustration

Figure 4–4 shows how to insert a QIC tape into the TZK10 tape drive.

Figure 4–4 Inserting a QIC Tape



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Removing a QIC Tape from a TZK10 Tape Drive

Summary

This section describes how to remove a QIC tape from the TZK10 tape drive.

Removal Procedure

Table 4–5 lists the steps that you must follow to remove a QIC tape from a TZK10 tape drive.

Note

See your operating system or application documentation for information on the software commands that dismount or eject the QIC tape.

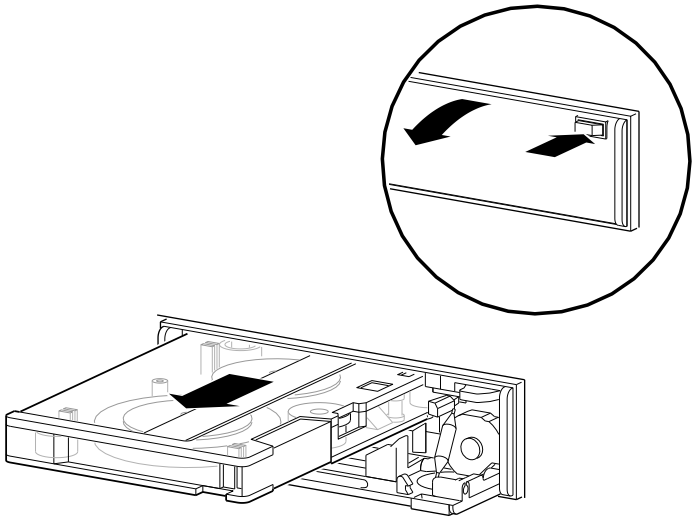
Table 4–5 Removing a QIC Tape from a TZK10 Tape Drive

Step	Action	Result
1	Enter the operating system commands to dismount or eject the QIC tape.	The TZK10 makes a whirring sound. The dual-color LED flashes green, then stays green when the whirring sounds stop.
2	Press the eject button.	The drive door partially opens. The dual-color LED turns off.
3	Open the door fully.	The QIC tape partially ejects from the TZK10.
4	Remove the QIC tape.	
5	Close the drive door.	

Removal Illustration

Figure 4–5 shows how to remove a QIC tape from a TZK10 tape drive.

Figure 4–5 Removing a QIC Tape



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Cleaning the Tape Drive Heads

Summary

This section describes how to clean the tape drive heads. The heads are the components of the tape drives that read data from and write data to the different types of tapes.

Cleaning Procedure

Digital recommends that, when cleaning the heads, you use the following cleaning kits:

- Use the TLZ04-HA head cleaning kit (supplied) to clean the heads of the TLZ06 tape drive.
- Use the TZK1X-HA head cleaning kit (supplied) to clean the heads of the TZK10 tape drive.

To clean the heads, follow the instructions supplied with the cleaning kit.

When to Clean the Heads

Digital recommends that you clean the heads of the TLZ06 tape drive every 2 weeks, or after 50 hours of use. Digital recommends that you clean the heads of the TZK10 tape drive after approximately 8 hours of use. Also clean the drive heads if you encounter problems reading or writing data. The following factors affect the cleaning interval:

- Frequency of use
- Quality of the tape
- Quality of the environment

5

Removable Storage Media

Introduction

This chapter contains information on the use and storage of the following media types that are used by the optional removable media storage devices:

- QIC tapes
- Cassette tapes
- Diskettes
- Compact discs

In This Chapter

This chapter contains the following sections:

- Quarter-Inch Cartridge (QIC) Tapes
- Cassette Tapes
- Diskettes
- Compact Discs

Quarter-Inch Cartridge (QIC) Tapes

Summary

This section describes QIC tapes.

QIC Tape Compatibility

The TZK10 tape drive is shipped with a DC6525 QIC tape (TZK1X-CC). Table 5–1 lists the other QIC tapes that are compatible with the TZK10 tape drive.

Table 5–1 QIC Tape Compatibility

Cartridge	Maximum Capacity	Format	R/W	Length
DC6525	525M bytes	QIC-320	R/W	300 m† (1000 ft‡)
DC6320	320M bytes	QIC-320	R/W	189 m (620 ft)
DC6150 DC600XTD	150M bytes	QIC-150	R/W	189 m (620 ft)
DC6150 DC600XTD	120M bytes	QIC-120	R/W	189 m (620 ft)
DC600A	60M bytes	QIC-24	R	173 m (600 ft)

†Metres
‡Feet

Handling and Storing QIC Tapes

Use the following guidelines when handling and storing QIC tapes:

- Do not drop or strike the tape.
- If a tape has been exposed to extreme heat or cold, allow it to stabilize at room temperature for the same amount of time as it was exposed, or at most, 24 hours.
- Store the tape where the room temperature is between 10°C and 40°C (50°F and 104°F) and the humidity is between 20% and 80%.
- Do not expose the tape to direct sunlight, abrasive particles, heat, electromagnetic fields, or X-rays.
- Store the QIC tape in its protective container, placed on its edge, or stacked. Do not stack QIC tapes more than five high.
- Place the identification label in the space provided on the top of the QIC tape.

Write-Protecting QIC Tapes

Summary

This section describes how to use the write-protect switch on the QIC tape.

Write-Protect Switch Positions

You can write-protect a QIC tape to prevent accidental overwriting or erasure of the data on that tape. Before using a QIC tape, check the position of the write-protect switch (❶). Table 5–2 describes the two positions of the write-protect switch.

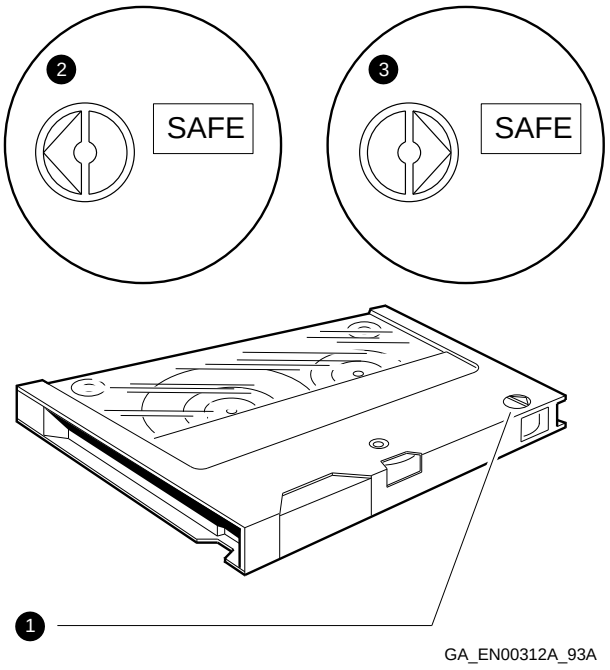
Table 5–2 QIC Tape Write-Protect Switch Positions

Position	Description
Write-enable position (❷)	When the switch is in this position, you can write to the tape. The tape is not protected from accidental erasure or overwriting of data.
Write-protect position (❸)	When the switch is in this position, you cannot write to the tape. The tape is protected from accidental erasure or overwriting of data.

Write-Protect Switch Illustration

Figure 5–1 shows the two positions of the write-protect switch on a QIC tape.

Figure 5–1 QIC Tape Write-Protect Switch Positions



Cassette Tapes

Summary

This section describes cassette tapes. Cassette tapes are industry-standard digital data storage (DDS) digital audio tapes (DATs).

Cassette Tape Compatibility

The TLZ06 cassette tape drive is shipped with a 90-metre (m) TLZ06-CA 4-mm tape. You can also use the TLZ06 with the 60-m TLZ04-CA tape. Table 5–3 lists both cassette tapes.

Table 5–3 Cassette Tape Compatibility

	Capacity (Gigabytes)	
Cassette	**Not Compressed**	**Compressed**
TLZ04-CA	1.3	2.6
TLZ06-CA	2.0	4.0

Handling and Storing Cassette Tapes

Use the following guidelines when handling and storing cassette tapes:

- Do not drop or strike the tape.
- If a tape has been exposed to extreme heat or cold, allow it to stabilize at room temperature for the same amount of time as it was exposed, or at most, 24 hours.
- Store the tape where the room temperature is between 10°C and 40°C (50°F and 104°F) and the humidity is between 20% and 80%.
- Do not expose the tape to direct sunlight, abrasive particles, heat, electromagnetic fields, or X-rays.
- Store the cassette tape in its protective container, placed on its edge, or stacked. Do not stack cassette tapes more than five high.
- Place the identification label in the space provided on the top of the cassette tape.

Write-Protecting Cassette Tapes

Summary

This section describes how to use the write-protect switch on the cassette tape.

Important Information

Caution

Do not use a pencil to slide the write-protect switch. Graphite dust can damage the cassette tape.

Write-Protect Switch Positions

You can write-protect a cassette tape to prevent accidental overwriting or erasure of the data on that tape. Before using a cassette tape, check the position of the write-protect switch (❶). Table 5–4 describes the two positions of the write-protect switch.

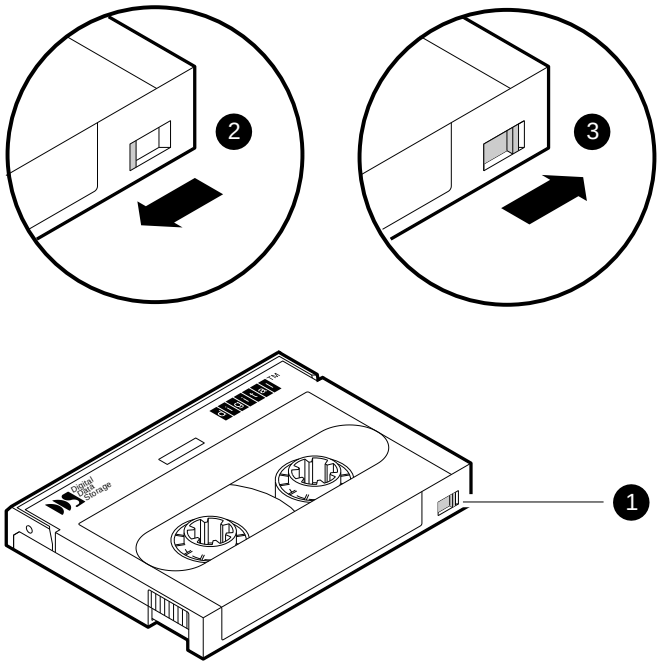
Table 5–4 Cassette Tape Write-Protect Switch Positions

Position	Description
Write-enable position (❷)	When the switch is in this position, you can write to the tape. The tape is not protected from accidental erasure or overwriting of data.
Write-protect position (❸)	When the switch is in this position, you cannot write to the tape. The tape is protected from accidental erasure or overwriting of data.

Write-Protect Switch Illustration

Figure 5–2 shows the two positions of the write-protect switch on a cassette tape.

Figure 5–2 Cassette Tape Write-Protect Switch Positions



Diskettes

Summary

This section describes 3.5-inch diskettes.

Diskette Compatibility

Table 5–5 lists the diskettes supported by the RX26 diskette.

Table 5–5 Diskette Compatibility

	Capacity (Megabytes)	
Diskette	**Unformatted**	**Formatted**
RZ24K—Double-sided, double density (2DD)	1.0	0.72
RX23K—High density (HD)	2.0	1.44
RX26K—Extra density (ED)	4.0	2.88

Handling and Storing Diskettes

Keep the diskettes dry, out of extreme temperatures and direct sunlight, and away from devices that contain magnets, such as telephones or monitors.

Write-Protect Switch Positions

You can write-protect a diskette to prevent accidental overwriting or erasure of the data on that diskette. Before using a diskette, check the position of the write-protect switch (❶). Table 5–6 describes the two positions of the write-protect switch.

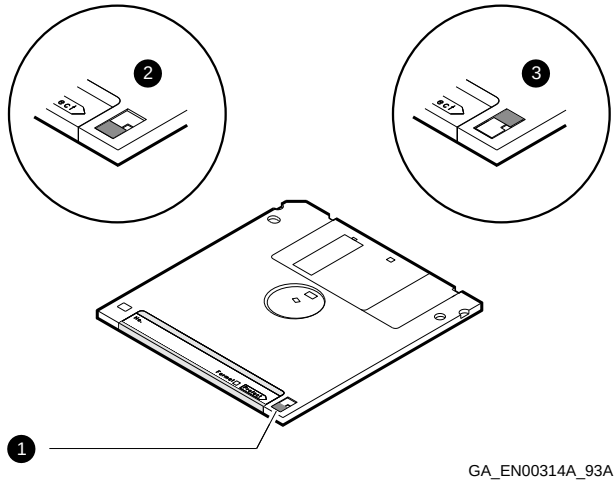
Table 5–6 3.5-Inch Diskette Write-Protect Switch Positions

Position	Description
Write-protect position (❷)	When the switch is in this position, you cannot write to the diskette. The diskette is protected from accidental erasure or overwriting of data.
Write-enable position (❸)	When the switch is in this position, you can write to the diskette. The diskette is not protected from accidental erasure or overwriting of data.

Write-Protect Switch Illustration

Figure 5–3 shows the two positions of the write-protect switch on a 3.5-inch diskette.

Figure 5–3 3.5-Inch Diskette Write-Protect Switch Positions



Compact Discs

Summary

This section describes how to handle and store compact discs.

Handling and Storing Compact Discs

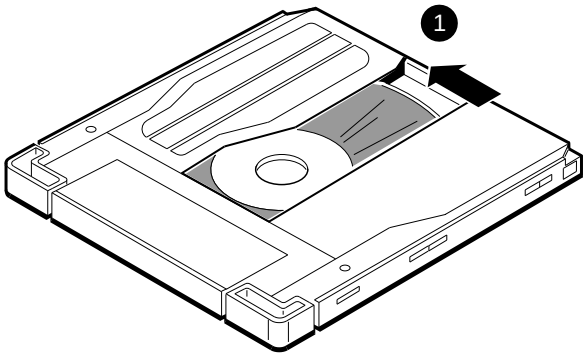
You must take the following precautions when handling compact discs and caddies:

- Do not drop the disc or the caddy.
- The shutter (❶) on the caddy automatically opens when you insert it into the RRD42. Do not open the shutter manually or touch the compact disc.
- Do not disassemble the caddy; it is precisely adjusted for use with the RRD42.
- Remove the caddy from the RRD42 before moving the system.
- Do not expose the compact disc or caddy to any of the following:
  - High humidity
  - High temperature
  - Excessive dust
  - Direct sunlight
- Hold the compact disc by its edges; never touch the surface.
- Use a proper compact disc cleaner to wipe the compact disc if it gets dirty.

Compact Disc and Caddy Illustration

Figure 5–4 shows the compact disc, the caddy, and the shutter.

Figure 5–4 Compact Disc, Caddy, and Shutter



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6

Connecting to External Ports

Introduction

This chapter describes the following:

- How to connect peripherals, including the **console terminal**, to the serial ports on the system unit
- How to connect a peripheral to the parallel port on the system unit
- How to connect external SCSI devices to an optional SCSI adapter installed in the system unit
- How to connect the system to a network

In This Chapter

This chapter contains the following sections:

- Before You Begin
- Serial Port Terminal Settings
- Connecting a Peripheral to a Serial Port
- Connecting a Peripheral to the Parallel Port
- Connecting External SCSI Devices
- Connecting the System to a Network

Before You Begin

Summary

This section describes information that you must know before you begin connecting external peripheral or network cables to the system unit.

Parallel and Serial Ports

All standard systems have two serial ports and one parallel port. However, if the system is a DEC 2000 Model 3000 AXP system with a console terminal attached, only one serial port is available for other types of peripherals.

Terminal Settings

You must use a console terminal on the DEC 2000 Model 300 AXP system to display system diagnostic information, enter console commands, and boot the operating system. Before you can use the console terminal with the system, you must modify certain display and communications settings on the terminal. See the section entitled Serial Port Terminal Settings for information on the settings that you must modify before you use the system console terminal.

External SCSI and Network Connections

To connect external SCSI devices to the system, or to connect the system to a network, the system must contain an appropriate EISA or ISA option board. Digital recommends that you use only Digital-supported option boards. The following section describes how to get information on and order the option boards that are currently supported.

Other External Connections

You can install other Digital-supported option boards that provide additional serial or modem communications ports. See the documentation supplied with the option for information on connecting cables to these ports. To get information on the option boards that are currently supported or to order these items, you must contact your Digital sales representative.

Serial Port Terminal Settings

Summary

This section describes the settings that the terminal must have to display the system console displays.

Terminal Settings

Table 6–1 lists the terminal settings and values that allow the terminal to display the system console displays.

Table 6–1 Terminal Settings

Terminal Setting	Value
Terminal mode	VT*nnn*-8 bit
Transmit speed	9600 **baud**
Receive speed	receive = transmit
Character format	8 bits, no parity
Stop bits	1
Comm1 port	DEC-423 (data-leads-only)

Connecting a Peripheral to a Serial Port

Summary

This section describes how to connect a peripheral that uses a serial port, for example, a terminal.

Connection Procedure

Table 6–2 lists the steps that you must follow to connect a peripheral to a serial port on the system unit.

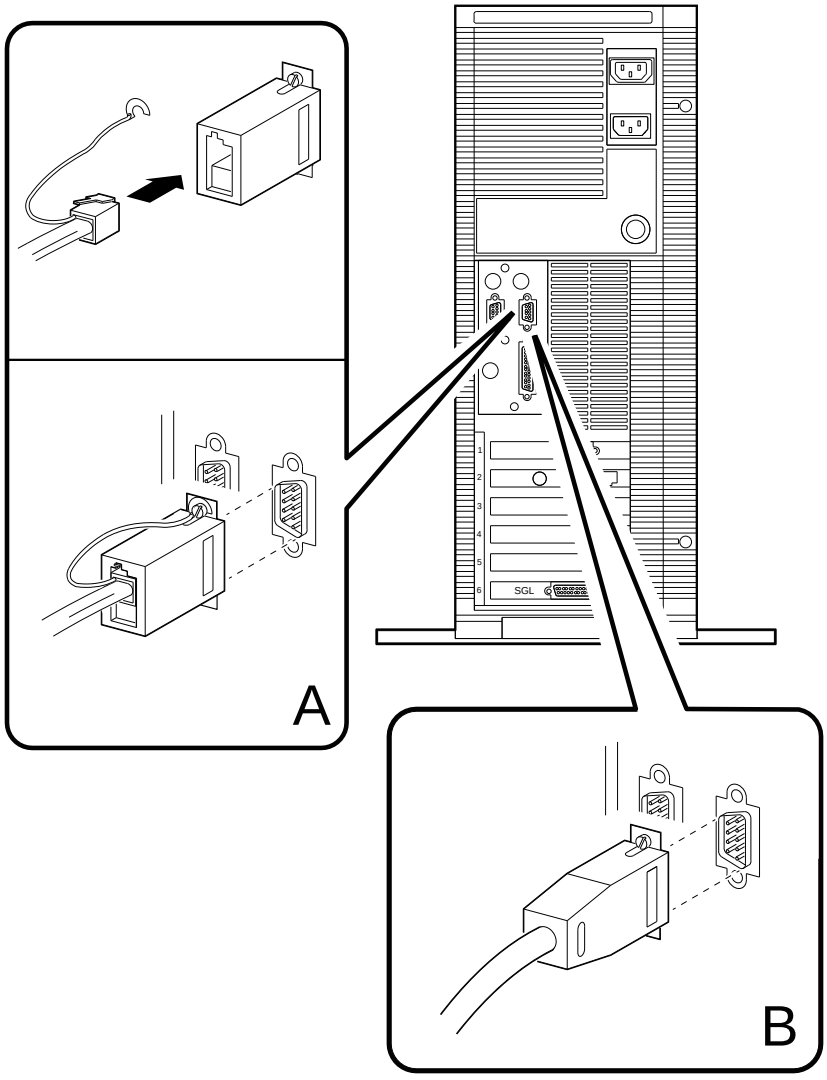
Table 6–2 Connecting a Peripheral to a Serial Port

Step	Action
1	Shut down the operating system, following the instructions in the operating system documentation.
2	Set the on/off switch on all peripherals and on the system unit to the off position.
3	Connect the peripheral cable to the system unit using one of the methods shown in Figure 6–1, as follows: • If the peripheral uses DEC423 DECconnect™ office cable, connect the shielded cable to the H8571-J adapter, then connect the adapter to the serial port (see Figure 6–1, A). • If the peripheral uses a standard shielded serial cable, connect the cable to the serial port (see Figure 6–1, B).
4	If necessary, secure the peripheral cable connector to the serial port by tightening the screws on each side of the connector.
5	Complete the installation of the peripheral, following the instructions in the documentation supplied with the peripheral.
6	Set the on/off switches on all the peripherals and on the system unit to the on position.

Connection Illustration

Figure 6–1 shows how to connect a peripheral to a serial port on the system unit.

Figure 6–1 Connecting a Peripheral to a Serial Port



Connecting a Peripheral to the Parallel Port

Summary

This section describes how to connect a peripheral that uses the parallel port, for example, a printer.

Connection Procedure

Table 6–3 lists the steps that you must follow to connect a peripheral to the parallel port on the system unit.

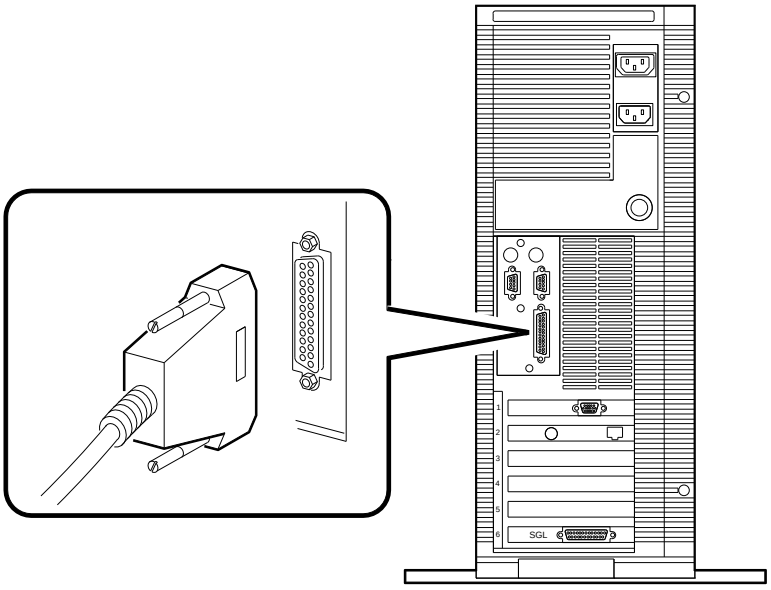
Table 6–3 Connecting a Peripheral to the Parallel Port

Step	Action
1	Shut down the operating system, following the instructions in the operating system documentation.
2	Set the on/off switch on all peripherals and on the system unit to the off position.
3	Connect the peripheral cable to the system as shown in Figure 6–2.
4	If necessary, secure the peripheral cable connector to the parallel port by tightening the screws on each side of the connector.
5	Complete the installation of the peripheral, following the instructions in the documentation supplied with the peripheral.
6	Set the on/off switches on all the peripherals and on the system unit to the on position.

Connection Illustration

Figure 6–2 shows how to connect a peripheral to the parallel port on the system unit.

Figure 6–2 Connecting a Peripheral to the Parallel Port



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Connecting External SCSI Devices

Summary

This section describes how to determine whether you need to connect external SCSI devices to the system. It also describes the information that you need to order these external SCSI devices from your Digital sales representative.

Deciding on External SCSI Devices

The system unit contains at least one SCSI option board. This SCSI option board enables the system to communicate with up to four SCSI drives and the PC/AT-standard interface diskette drive installed in the system unit. If you require additional SCSI drives, these drives must be connected externally to the system unit.

External SCSI Drive Support

The SCSI **bus** provided by the SCSI option board installed in the system unit can support up to seven SCSI devices. If the system unit is fully configured with four internal SCSI devices, you can connect up to three external SCSI devices to the external port on the SCSI option board.

If you require more than seven SCSI devices, you must install an additional SCSI option board. The additional SCSI option board provides another SCSI bus. You can connect up to seven SCSI devices to this bus. These devices are also connected to the external port on the SCSI option board.

Ordering SCSI Devices, Options, and Accessories

Digital provides a range of external SCSI devices, including disk drives, tape drives, CD-ROM drives, and accessories for these devices. Digital also provides a range of SCSI option boards that allow you to connect these devices externally to the system. To get information on the SCSI devices, options, and accessories that are currently supported or to order these items, you must contact your Digital sales representative.

Important Information

When ordering external SCSI devices, you must also order the correct cable to connect these devices to the system unit. The external SCSI port on the SCSI option board that you connect the cable to differs depending on the type of option board installed.

Specifying SCSI Cables

Your Digital sales representative can help you to specify the correct cable required to connect the external SCSI devices to the system unit. Before calling your sales representative, make sure that you know the part number and name of the SCSI option board. Your sales representative needs this information to specify the correct cable.

Connecting External SCSI Devices

See the documentation supplied with the SCSI option board and the documentation supplied with the external SCSI devices for information on connecting these devices.

Connecting the System to a Network

Summary

This section describes how to connect the system to a network. It also describes the information you need to order network option boards from your Digital sales representative.

Network Option Board Support

The system must contain an appropriate network option board before you can connect it to a network. For example, if you want to connect the system to a ThinWire Ethernet network, the network option board installed in the system unit must provide a ThinWire **Ethernet port**. Other network types may require different network option boards.

Ordering Network Option Boards

Digital recommends that you use only Digital-supported network option boards. To get information on the network option boards that are currently supported or to order these option boards, you must contact your Digital sales representative.

Network Connection

See the documentation supplied with the network option board for information on connecting the system to a network.

A

Associated and Related Documents

This appendix lists the associated and related documents. Some of the following documents may not be available in every country. Contact your Digital Sales representative for information on the availability of particular documents.

Associated Documents

The following documents contain information on the DECpc AXP 150 and DEC 2000 Model 300 AXP systems:

- *DECpc AXP 150 and DEC 2000 Model 300 AXP Installation Information* (EK-A0635-IN)
- *DECpc AXP 150 and DEC 2000 Model 300 AXP Customer Technical Information* (EK-A0636-TM)
- *PB22H-KB System Module Hardware Reference Information* (EK-A0638-TD)

Factory Installed Software (FIS) Documentation

The following documents contain information on FIS:

- *OpenVMS Factory Installed Software User Information* (EK-A0377-UG)
- *DEC OSF/1 AXP Factory Installed Software User Information* (EK-SFFIS-UG)

Related Documents

The following documents contain information that is related to the system:

- *TZK10 Cartridge Tape Drive Owner's Guide* (EK-TZK10-OG)
- *TLZ06 Cassette Tape Drive Owner's Manual* (EK-TLZ06-OM)
- *RX26 Diskette Drive Owner's Reference Card* (EK-RX26D-RC)
- *RRD42 Disc Drive Owner's Manual* (EK-RRD42-OM)

Glossary

The glossary defines some of the technical terms used in this manual.

10BASE-T

An IEEE standard 802.3-compliant Ethernet network made of **twisted pair** Ethernet cables. *See also* twisted pair.

802.3

An Institute of Electrical and Electronics Engineers (**IEEE**) standard describing the physical and data link layers of a local area network based on bus topology and Carrier Sense Multiple Access/Collision Detect (CSMA/CD).

ANSI

American National Standards Institute. An organization that develops and publishes standards for the computer industry.

ASCII

American Standard Code for Information Interchange.

back up

To make a **backup** copy.

backup

A copy of data on one media type saved on a similar or different media type. When you make a backup copy, you can recover data after an accidental loss.

bandwidth

Bandwidth is often used to express the rate of data transfer in an I/O **channel**. This usage assumes that a wide bandwidth may contain a high frequency, which can accommodate a high rate of data transfer.

baud rate

The speed at which data is transmitted over a data line. Baud rates are measured in bits per second.

binary

A number system that uses two digits: 0 and 1. They are represented in system circuitry by two voltage levels, and programs are executed in binary form.

bit

Binary digit. The smallest unit of data in a binary notation system, designated as 0 or 1.

boot

Short for bootstrap. Loading an operating system into memory is called booting.

bootstrap

See boot.

bus

A group of signals that consists of many transmission lines or wires. A bus interconnects computer system components to provide communications paths for addresses, data, and control information.

byte

Eight contiguous bits starting on an addressable byte boundary. The bits are numbered right to left, 0 through 7. It is the memory size required to store one **ASCII** character.

cache

See cache memory.

cache memory

A small, high-speed memory placed between slower main memory and the processor. A cache increases effective memory transfer rates and processor speed. It contains copies of data recently used by the processor and fetches several bytes of data from memory in anticipation that the processor will access the next sequential series of bytes. The system contains a backup cache located in discrete circuits on the system module and two on-chip internal caches located in the DECchip 21064 **CPU** chip.

caddy

The holder for inserting a compact disc into a compact disc drive.

CD-ROM

Compact disc read-only memory. An optical removable media type. It is also called a compact disc.

central processing unit (CPU)

See CPU.

channel

A path along which digital information can flow in a computer.

CISC

Complex instruction set computer. An instruction set consisting of a large number of complex instructions that are managed by microcode. *Contrast with* RISC.

client/server computing

An approach to computing that enables personal computer and workstation users—the *client*—to work cooperatively with software programs stored on a mainframe or minicomputer—the *server*.

CMOS

Complementary metal-oxide semiconductor. A silicon device formed by a process that combines PMOS and NMOS semiconductor material.

compact disc

See CD-ROM.

console mode

The state in which the system and the console terminal operate under the control of the **console program**.

console program

The code that the CPU executes during console mode.

console terminal

The terminal connected to the console subsystem. The console is used to start the system and direct activities between the computer operator and the computer system.

controller

A system component, usually a printed circuit board, that regulates the operation of one or more peripheral devices.

CPU

The unit of the computer that is responsible for interpreting and executing instructions.

data

A formal representation of information suitable for communication, interpretation, and processing by humans or computers.

DECchip 21064 processor

The **CMOS**-4, Alpha AXP architecture, single-chip processor used on Alpha AXP based computers.

DEC OSF/1 AXP operating system

A general-purpose operating system based on the Open Software Foundation OSF/1 1.0 technology. DEC OSF/1 runs on a range of Alpha AXP systems.

default

A value or setting that in most cases is *normal* or *expected*.

device

The general name for any unit connected to the system that is capable of receiving, storing, or transmitting data.

device name

The name by which a device or controller is identified in the system.

diagnostics

Programs, located in read-only memory, that detect and identify abnormal system hardware operation. *See* ROM.

disk

A flat circular plate with a coating on which data is magnetically stored in concentric circles (tracks). A disk resides permanently inside a disk drive. *See also* diskette.

disk drive

A device that holds a disk. The drive contains mechanical components that spin the disk and move the read/write heads that store and read information on the surface of the disk.

diskette

A flat circular plate with a coating on which data is magnetically stored in concentric circles (tracks). The disk is enclosed in a protective plastic case or envelope. Unlike disks, you can remove a diskette from the diskette drive. *See also* disk.

diskette drive

A device that holds a diskette. The drive contains mechanical components that spin the disk and move the read/write heads that store and read information on the surface of the disk.

EEPROM

Electrically erasable programmable read-only memory. A memory device that can be byte-erased, written to, and read from. *Contrast with* FEPROM.

EISA

Extend Industry Standard Architecture. The EISA bus standard is a 32-bit bus standard and is an extension of the 8-bit or 16-bit ISA bus standard. EISA buses support both EISA and older ISA option boards. *See* ISA.

environment variable

Global data structures that can be accessed from console mode. The setting of these data structures determines how a system powers up, boots operating system software, and operates.

Ethernet

A local area network that was originally developed by Xerox® Corporation and has become the IEEE **802.3** standard LAN. Ethernet LANs use bus topology and are based on Carrier Sense Multiple Access with Collision Detection (CSMA/CD).

Ethernet ports

The connectors through which the Ethernet is connected to the system.

factory installed software (FIS)

See FIS.

fast SCSI

An optional mode of SCSI-2 that allows transmission rates of up to 10M bytes/second. *See also* SCSI.

FEPROM

Flash-erasable programmable read-only memory. FEPROMs can be bank- or bulk-erased. *Contrast with* EEPROM.

FIS

Operating system software that is loaded into a system disk during manufacture. On site, the FIS is bootstrapped in the system, prompting a predefined menu of questions on the final configuration.

firmware

Software that interacts directly with the hardware devices. It is usually located in ROM memory. It serves as an intermediary or transition between the hardware and the higher-level software.

halt

The action of transferring control to the console program.

hard disk

See disk.

head

The part of a fixed disk drive, diskette drive, or tape drive that reads, records, and erases data. Also called read/write head.

IEEE

Institute of Electrical and Electronics Engineers.

ISA

Industry Standard Architecture. A 16-bit bus standard introduced with the IBM® PC/AT system. It is backwards compatible with the 8-bit IBM PC/XT bus. The ISA standard fostered the development of many different types of option cards that were compatible with a wide range of PC systems.

LAN

Local area network. A high-speed communications network that covers a limited geographical area, such as a section of a building, an entire building, or a cluster of buildings. It is a privately owned communications network whose speed is greater than 1M bits/second.

LED

Light-emitting diode. A semiconductor device that glows when supplied with voltage. LEDs are used as indicators on the system unit and on certain devices installed in the system unit.

local area network (LAN)

See LAN.

magnetic tape

A tape that is made of plastic and coated with magnetic oxide. It is used for storing data. Also called magtape.

memory

The area of the system that electrically stores instructions and data, often temporarily.

memory module

A printed circuit board that contains additional memory for the system.

module

A printed circuit board that contains electrical components and electrically conductive pathways between components. A module stores data or memory or controls the functions of a device.

network

A group of individual computer systems that are connected by communications lines to share information and resources.

nonvolatile random-access memory (NVRAM)

See NVRAM.

NVR

The device name that the system uses when testing the NVRAM. *See also* NVRAM.

NVRAM

Nonvolatile random-access memory. A memory device that retains information in the absence of power.

operating system

A collection of system programs that control the operation of the system and allow the user to access data files, input/output devices, and applications programs. The operating system software performs such tasks as assigning memory to programs and data, processing requests, and scheduling jobs.

open system

A system that implements sufficient open specifications for interfaces, services, and supporting formats to enable applications software to:

- Be ported across a wide range of systems with minimal changes
- Interoperate with other applications on local and remote systems

- Interact with users in a style that facilitates user portability

OpenVMS AXP operating system

Digital's open version of the VMS operating system, which runs on Alpha AXP machines. *See also* open system.

PALcode

Alpha AXP Privileged Architecture Library code, written to support Alpha AXP processors. PALcode implements architecturally defined behavior.

parallel port

An external port for parallel peripherals and printers. There is one parallel port on the system.

peripheral

A device that provides the CPU with additional memory storage or communications capability. Examples are disk and diskette drives, video terminals, and printers.

port

The name of the socket or connector at the back of the system unit to which a terminal, printer, or other communications devices are connected.

power-up

The sequence of events that starts the flow of electrical current to a system or its components.

prompt

Words or characters that the system displays to indicate that it is waiting for you to enter a command.

RAM

Random access memory. A read/write memory device that can randomly access any location during normal operations. The type of memory that the system uses to store the instructions of programs currently being run. *Compare with* ROM.

random-access memory (RAM)

See RAM.

read-only memory (ROM)

See ROM.

RISC

Reduced instruction set computer. A computer with an instruction set that is reduced in complexity.

ROM

Read-only memory. A memory whose contents cannot be modified during the normal use of the system. The system can use the data contained in a ROM but cannot change it. *Compare with* RAM.

SCSI

Small computer system interface. An **ANSI**-standard interface for connecting disks and other peripheral devices to computer systems. *See also* fast SCSI.

serial port

An external port for serial devices such as terminals and printers. There are two serial ports on the system, one of which is the console serial port.

system

A combination of system hardware, software, and peripheral devices that perform specific processing operations.

system disk

The device on which operating system software resides.

tape drive

A device that contains mechanical components and holds, turns, reads, and writes on magnetic tape.

terminal

An input/output device that lets you communicate with the system. Terminals are divided into two categories: video and hardcopy.

thickwire

An IEEE standard 802.3-compliant Ethernet network made of standard Ethernet cable, as opposed to ThinWire Ethernet cable. Also called standard Ethernet or 10Base-5. *Contrast with* ThinWire.

ThinWire

A Digital trademark used to describe its 10BASE-2 (IEEE standard 802.3 compliant) Ethernet products used for local distribution of data. *Contrast with* thickwire.

twisted pair

A cable made by twisting together two insulated conductors. 10BASE-T Ethernet cables are often called twisted pair Ethernet cables. *See* 10BASE-T.

VGA

Video graphics array. The VGA standard supports both alphanumeric modes and graphics modes. The alphanumeric mode supports 80 characters on between 25 to 50 lines using 16 colors. The graphics mode supports screen resolutions of 320 x 200 using 256 colors or 640 x 480 using 16 colors. The VGA standard is fully compatible with the monochrome display adapter (MDA), color graphics adapter (CGA) and enhanced graphics adapter (EGA) standards. Originally, the VGA standard did not support the Hercules graphics standard, but many VGA compatible option boards can. *See also* SVGA.

SVGA

Super VGA. The SVGA standard provides increased screen resolutions when compared with VGA. The SVGA standard offers screen resolutions of between 640 x 480 using 256 colors and 600 x 800 using 16 colors. Many SVGA graphics adapters offer even higher resolution modes. *See also* VGA.

write-protect

To protect a disk, diskette, or other storage medium from the addition, revision, or deletion of information.

write-protect switch

The switch that you set on tapes, cartridges, or diskettes to prevent loss of data by accidental overwriting.

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